Sarah Z. Hodkinson. A Plan of Action for Organizing the Resources Found in the Virginia Division of Mineral Resources Library. A Master's Project for the M.S. in L.S degree. April, 2007. 33 pages. Advisor: Claudia Gollop

This master's project was intended to provide the Virginia Division of Mineral Resources (VDMR) in Charlottesville, VA with a plan of action for increasing the effectiveness of their library. The VDMR library should be the premier Geology library in the Commonwealth of Virginia, but they have not had a full-time librarian on staff since the mid 1990s, and very little has been done to maintain the library since that time. In this plan of action, basic library procedures have been outlined, along with a list of recommendations for maintaining and improving the library's services.

Headings:

Geology libraries and collections / Aims and objectives

Geology libraries and collections / Administration

Geology libraries and collections / Evaluation

Geological Survey (U.S.)

Special libraries / Aims and objectives

A PLAN OF ACTION FOR ORGANIZING THE RESOURCES FOUND IN THE VIRGINIA DIVISION OF MINERAL RESOURCES LIBRARY

by
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A Master's paper submitted to the faculty
of the School of Information and Library Science
of the University of North Carolina at Chapel Hill
in partial fulfillment of the requirements
for the degree of Master of Science in
Library Science.

Chapel Hill, North Carolina

April 2007

Approved by

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INTRODUCTION

The Virginia Division of Mineral Resources (VDMR) Library is a special library that is not reaching its full potential. This library, housed in a grand wing of the Virginia Department of Mines, Minerals, and Energy in Charlottesville, Virginia, contains a working collection of books, technical papers, journals and maps to support the research of geologists working for the Division of Mineral Resources (see Appendix A). The facility is modern with the materials carefully organized in the shelves and drawers, and the professional geologists in the department are proud of their collections. However, the Division of Mineral Resources lost its funding to keep an in-house librarian in the mid-1990s. Since that time the small special library has not been able to keep up with the technological trends of its library peers. In this paper I will describe my consultations with the staff of the VDMR, and the procedures, workflows, and recommendations that I will present to VDMR as the culmination of my project.

In the United States, each state has its own state geological survey, or state survey, which is run by the state government. This division of the state government is usually responsible for providing information about the natural resources, hazards, and conservation issues for each state. It employs professional geologists to do field, lab, and literature research, which is then published in a number of series. Most state surveys publish open file reports, special reports, investigations, field trip guides, topographic maps, and other literature that may be purchased by other state surveys, libraries, or interested citizens. In Virginia, the state survey is part of what is now called the Virginia

Department of Mines, Minerals, and Energy, Division of Mineral Resources. The VDMR's library is officially the state geology library of Virginia.

Since the library has no full-time staff, the doors are usually kept locked so that the geologists must let themselves in when they want to borrow something. They take what they need from the shelves and keep it in their offices until they are finished with it. Most of the patrons work in the Division, although the library also serves the needs of local genealogists who come to look at old topographic maps for family research, after making arrangements with VDMR staff members who can let them into the library. Until the day the last librarian retired, new books were assigned Library of Congress Classification call numbers and a card catalog was maintained, but no one kept up the cards after he left. Today the shelves are each labeled with a number and a letter, and library patrons may use a "Quick Index" to figure out in which general area they should search (see Appendix B). There is no searchable catalog available for researchers; the holdings are kept in simple Excel spreadsheet inventories in a folder on the Division's network drive. There are many geologists from the department who work in field stations across Virginia who have to call people in the Charlottesville office to ask if the library has a certain volume. The geologists would like to have a proper catalog available online, but they lack the budget and manpower to put such a system in place. Most of the day-to-day operations of the library have been neglected over the past 10 years, so that now the books are in a complex order according to what collection they belong to, and there are no complete inventories of what exactly is on the shelves and where. Some of the books and maps are more than a hundred years old, and an archival committee has

recently been established to address preservation issues (see Appendix C). No one person is responsible for the library, and there is no budget or process for acquiring new books.

Several of the VDMR geologists asked that I help them create a plan of action for organizational improvements in the library, involving recommendations for workflows, designing a budget, and creating an online catalog, among other things. I visited the library several times and communicated with many of the staff members to determine the needs of the library and the Division of Mineral Resources. After evaluating the strengths and weaknesses of the library, reviewing library science literature, and talking with many geology librarians, I have assembled a set of ideas for the VDMR Library. This "plan of action," most of which is included in the body of this paper, highlights ongoing responsibilities and short- and long-term projects that staff members should address in order to keep their library functional, relevant, and useful.

Informal discussions with geologists who work in the libraries or resource centers of other state surveys showed that most of VDMR's peers are in similar situations. State governments have been allocating less and less money for their geological divisions, and as a result many state geological surveys have had to cut money from the library budgets. Compared with other agencies, VDMR is fortunate to have such a grand, fairly organized library facility, and also to have several staff members who still care about the fate of their library.

The final product of this project will be a binder containing a variety of useful materials for VDMR. Along with my checklists, instructions, and recommendations, I will include some relevant articles, pamphlets, and notes that will help them get started on their library renaissance project. I will go over each of the materials with the

concerned geologists to make sure that they will be completely ready to begin the work they need to do, and answer any questions as well as I am able. The geologists at VDMR have a superior facility, and this project will help them get closer to realizing the potential of their own library with the resources that are already available to them.

PROJECT TIMELINE

- June 12, 2006: Met with Karen Berquist, William and Mary Geology Librarian and wife of retired State Geologist, Rick Berquist, to discuss the possibility of working with VDMR as a master's project
- June 29, 2006: Confirmed commitment to working with VDMR, and Rick Berquist spoke with the new State Geologist about having an assessment with recommendations done for their library
- July 3, 2006: Began background research on VDMR and library
- July 18, 2006: Got feedback from SILS advisor about project idea
- August 29, 2006: Discussed with Karen Berquist potential directions and goals for the project and got contact information for VDMR
- September 6, 2006: Contacted State Geologist Ed Erb and geologist Michael Upchurch and made arrangements for first visit to Charlottesville
- September 15, 2006: First visit to VDMR in Charlottesville. Spent the afternoon meeting with Elizabeth Campbell, Delores Green, Ed Erb and Michael Upchurch, and had a tour of all the VDMR facilities
- September 20, 2006: Began research on retrospective conversion
- October 13, 2006: Met with Karen and Rick Berquist in Richmond, VA to discuss possibilities and objectives for the VDMR plan of action
- January 19, 2007: Visited VDRM library in Charlottesville do more research and meet with Elizabeth Campbell, Delores Green and Amy Gilmer
- January 27, 2007: Began drafting plan of action
- February 22, 2007: Visited Charlottesville again

- March 2, 2007: Solicited the advice of other state survey librarians through a series of emails
- March 3, 2007: Discussed with Inmagic® representatives the possibility of using their programs for creating an integrated library system
- March 9, 2007: Toured the North Carolina state geology library in Raleigh and met with Mary Tucker to discuss the state of their library
- April 17, 2007: Plan to give recommendations to VDMR

PROCEDURES AND WORKFLOWS

One of the main concerns of the VDMR staff is the lack of set library procedures. In this section I will describe some simple low-maintenance processes for keeping up the library, and list responsibilities for each process so that they may be formally divided among staff members. Even if most of these tasks are regularly taken care of, it is important that they are formally designated as the responsibilities of specific people so that the library can continue to operate smoothly without a librarian. The processes of acquisition, circulation, inventory, collection development, and reference service for the VDMR are described in detail below, followed by a step-by-set list of actions. "Type of Action" refers to how much effort or thought must be put into each task, which may help in the delegation of responsibilities.

Acquisition of Books

Division geologists may find throughout the course of their research certain books that they believe would be important to own. When this happens, someone in VDMR should have the responsibility of deciding to purchase it and then allocating the proper funds for the purchase. The order must be placed and recorded, and when the book arrives, it should be "checked-in" before it is sent to the geologist who requested it originally. As soon as it arrives in the mail, it should be stamped to show that it belongs to the VDMR Library, and then someone needs to decide where it will fit in the organizational scheme of the library. If it is a series book, like a state survey publication, then this decision is easy because it will fit into the numerical scheme of the existing series on the shelves.

If the book is just an individual title, then someone will need to determine its call number. Most books that are published now have a Library of Congress Classification (LCC) call number on the back of their title pages under the subject headings, so it should not be too hard to find. LCC call numbers have a letter or two followed by a few numbers and letters, based on the subject of the book; for example, the call number for a book about Virginia Minerals would look something like "QE375.D54." If you can't find a call number on the back of the title page, you can also search catalogs of other libraries to see how they have cataloged it (given it call number). The best place to search is a comprehensive database called WorldCat, at www.worldcat.org. This site allows you to simultaneously search the catalogs of more than 10,000 libraries across the world. Type the title of the new book in question into the search box, and then click through the results to find a call number that another library has assigned to it.

After you have determined the call number, make a small label with just the call number, and place at the bottom of the spine, or at the bottom left side of the cover if the spine is particularly thin. Be sure to record the book in the library's database or shelf list too, and include the Title, Author, Publication Year, Call number or Series, and any other pertinent information in a note. Finally, make sure the geologist who wanted the book originally knows that it is available.

Potential Acquisition Process for the VDMR Library		Type of Action
1.	Staff member recommends a book to purchase	Open
2.	Decide if VDMR should buy it for the library	Administrative
3.	Decide which fund will pay for the book	Administrative
4.	Place order	Technical
5.	Receive book	Technical
6.	Stamp inside cover with VDMR library property stamp	Technical
7.	Decided where book should eventually go in the library	Administrative
8.	If not a series, find call number for the book	Technical
9.	Put call number or identifier on the book's binding	Technical
10.	Record information in shelf-list or database	Technical

Circulation

Without a librarian or assistant to sit at the "circulation desk" all day, circulation procedures do not need to be too elaborate. A simple sign-out sheet on a clipboard should suffice, with columns for the title, author, geologist's name and extension, and the date. This is important because all the books in the library should be accounted for at all times. If people take books at will without recording them, then someone else may come looking for a specific book, not be able to find it, and potentially order a second copy. A sign-in sheet allows staff to see who has what, and coordinate sharing the book if necessary.

Since there are probably a lot of VDMR library books hiding in bookshelves in offices across the building, it would be a good idea to send an email to all employees of the Division asking them to please submit a list of the books they have. If they could simply send a quick reply with the names and authors of the library books they have, then these could be added to the circulation sheet and later accounted for in the inventory.

Potential Circulation Process for the VDMR Library		Type of Action
1.	Type up sign-out sheet and sign with instructions	Technical
2.	Place sign-out log and sign in prominent spot	Technical
3.	Email to staff about new policy and asking for info	Administrative
4.	Record preciously checked out books on sign-out log	Technical
5.	Add new pages to sign-out log as necessary	Technical

Inventory

The VDMR Library should do an inventory of their holdings every year or two to make sure that the books are in order and that the library has an accurate record of the holdings. If several staff members can be involved, it should only take about a week of work. The library inventory event may be organized like the annual inventory of the store: any members of the staff are invited, and encouraged to participate with incentives such as free coffee and doughnuts. Each member of the inventory team should be given a printed list of a section of the stacks, and then he or she will be able to read through the shelves and check off the presence (or note the absence) of each book or serial.

Potential Inventory Process for the VDMR Library		Type of Action
1.	Decide date for inventory	Administrative
2.	Solicit volunteers (remember incentives/compensation)	Administrative
3.	Print out lists of books from the spreadsheets or database	Technical
4.	Explain process to volunteers and delegate responsibilities	Administrative
5.	Go through each shelf with the lists and check off what is are present	Open
6.	Compile inventory results in database or spreadsheets in “Notes” field	Technical

Collection Development

There is no apparent collection development policy in place at the VDMR library, most likely because the library does not have its own budget. If there were more money available, however, relevant books and materials should be ordered as soon as they are available, rather than on an as-requested basis. Ideally, there should be a policy that

states the specific subject areas that the library wants to collect, and then someone would be responsible for searching print and online catalogs for relevant books, state survey publications, or theses and dissertations. With as little as $5,000 a year allotted for collection development, VDMR could greatly enhance the quality of their collection with up-to-date publications and would be able to provide geologists with important resources before they even need to ask for them.

There are many sources for finding information about new publications. First of all, it may be helpful to look through the publications of other state surveys. The website of the American Association of State Geologists has links to all the state surveys, which may lead you to some important publications: www.stategeologists.org. There are mailing lists of GSA, AGU, or other societies that publish relevant texts, and they will send you catalogs of their featured publications. To learn about new theses and dissertations, it may be best correspond with the geology departments themselves. Departments' websites usually describe current research, and it is often possible to request copies of interesting theses directly with minimal cost.

Another facet of collection development is weeding, which may or may not be an important task for VDMR. Currently there is plenty of space for older books, but the library may find in the future that they would like to keep only the newer or more relevant resources in the library. As it is, the old books are fine where they are, so this is not a task that needs to be addressed immediately. However, if VDMR decides on a more aggressive collection development policy and space becomes limited, it is appropriate to discard old volumes that no one is using. Most libraries have to weed their

collections every few years, though it is usually a process that is not talked about very much.

Potential Collection Development Process for the VDMR Library		Type of Action
1.	Determine collection development policy and budget	Administrative
2.	Search for new or important publications	Administrative
3.	Recommend purchases	Administrative
4.	Address weeding	Administrative

Reference Questions

A small but important responsibility for VDMR staff is answering questions about the library's holdings. While this has probably been addressed already, one person should be designated as the official contact person to answer questions about the library. This person's email address and phone number should be listed on the website as well. When any questions come from community members or VDMR staff about library holdings or services, a designated public service representative should answer them.

Potential Inventory Process for the VDMR Library		Type of Action
1.	Designate one person to answer reference questions	Administrative
2.	Provide this person's contact information on the website	Administrative
3.	Have any library-related questions referred to the contact person	Technical

RECOMMENDATIONS

The VDMR library is fortunate to have such a good facility and concerned staff members, and it appears to have been well maintained for a special library with no librarian. The 10 recommendations tasks and projects listed below for would significantly improve the quality and effectiveness of the library. They are described in greater detail in the following section. This list is in order of urgency and feasibility, with the simplest and most important first.

1. Delegate responsibilities.
2. Have one VDMR staff member join GSIS and Geonet Listserv.
3. Create a database of library holdings.
4. Inventory holdings.
5. Create a simple webpage for the library.
6. Address security and archival concerns.
7. Scan old maps and slides and create a "digital library."
8. Establish partnership with UVA for staffing and document delivery.
9. Reorganize books according to LCC.
10. Hire a professional librarian.

1. Delegate Responsibilities

The first thing that needs to be done is the delegation of responsibilities for the library. Currently there are several geologists who are concerned about the state of the library, but no one is specifically responsible for it according to their job descriptions. The concerned geologists should meet as a team to decide who is willing to accept which responsibilities. They may use the lists of workflow procedures listed in the previous section to designate tasks. Also, the fewer people directly involved with regular upkeep of the library, the better, because there should be a centralized workforce. If library

responsibilities can be added to specific staff members' job descriptions, that will also help people from feeling that they are being overburdened with too many expectations.

2. Join the Geoscience Information Society

The Geoscience Information Society (GSIS) is a well-established organization for geology librarians or information professionals. The society was organized in 1965 and is part of AGI and GSA, and they meet annually at the GSA conferences. They are an extremely friendly and supportive group of people, and some of the members are professionals who also are not technically librarians but who work in state survey libraries. The cost of membership is not prohibitive, and it would be very useful if someone at VDMR joined the Society. More information and instructions on how to join can be found online at www.geoinfo.org.

GSIS also runs a listserv called Geonet, which (as of 2007) does not require membership to join. On Geonet, librarians, geologists, and publishers post all kinds of information, from requests for advice about specific projects to announcements of new publications or the availability of free extra copies of books or serials. It is a wonderful resource, and it would be wise for at least one of the VDMR geologists to sign up to receive these messages. It is very reassuring to be part of a network of people who are dealing with the same sorts of issues and opportunities in other geology libraries.

3. Create a Database

In order to help the library reach its full potential, there needs to be a searchable database that can be used by any Virginia geologist. There should be a simple database

in which one may search for author, title, or keyword (any word mentioned in the record). This should be accessible from any of the field offices in Virginia in a password-protected online location. By importing Excel spreadsheets into an Access database, this can be done with minimal effort. There is probably someone at VDMR who has a technical understanding of database design and would be able to accomplish this. Access should allow someone to make a relational database that is updatable through a user-friendly form, and easily search for particular records. Access is a good program to use because it does not require any outside purchases, and there is a vast amount of support for it readily available on the web. A lot of the other state survey libraries have made Access databases for their holding records and have been pleased with the self-sufficiency that it provides.

There are many other options for creating a catalog if there were more money or time available. Many information technology companies sell programs for small, independent libraries who want to "automate their systems," and one may find vendors of these programs at the Special Library Association annual conference. One such company used by a few small geology libraries is Inmagic™ (http://www.inmagic.com/). They can help create a database that would be searchable online (a webpublisher), and are supposedly one of the least expensive companies to provide this service, from as low as $5,000. Their representatives say that the main product, Inmagic Genie, can cost from $3,000 to $15,000 to implement, depending on the system. Spectrum 5.3 (http://www.sagebrushcorp.com/tech/spectrum.cfm) is another "library technology solution" that is used by at least one other state survey library.

4. Inventory Holdings

This is one of the processes that I described in the previous section, but it needs to be reemphasized here. The holdings of the library must be kept in order, and it is very important that the Excel spreadsheets or database have an accurate picture of what materials are currently in the library. Inventory should be done every few years, but it should not be too intimidating a task. One of the main advantages of having a number of geologists helping out with the inventory is that they will get an opportunity to see what the library has to offer, and they may be encouraged to use it more often. A group inventory project may provide VDMR with a new and well-deserved sense of pride in their library, which is always healthy for an organization.

5. Create a Library Webpage

A lot of the state survey websites have a simple page of information about their library facilities. I think that VDMR would do well to create something like this, whether or not they wish to draw in non-geologist patrons. Since the VDMR should be the premier Geology Library in the state, there needs to be a more information about it on the web. A half-page would suffice, with some basic information such as the scope of the library, who to contact for more information, and a sunny-looking picture of the reading area. Some of the states with good examples of simple library webpages are California (http://www.consrv.ca.gov/cgs/information/publications/library/), Illinois (http://www.isgs.uiuc.edu/library/), Maryland (http://www.mgs.md.gov/library/), and Washington (http://www.dnr.wa.gov/geology/library.htm).

6. Address Archival and Security Concerns

As is already apparent, there are many issues involved in preserving the valuable materials housed in the stacks of the VDMR Library. VDMR has done well already to have established an archival committee, and the work and brainstorming of this group should be continued and encouraged. The Geoscience Information Society, which was mentioned in the second task, has a Preservation Committee that could be a good source of advice in this work. They have a very helpful website (http://www.libraries.psu.edu/emsl/guides/gsis/default.html) which has links to a variety of useful materials for archiving geology-related materials, finding funding for such projects, and other relevant links.

When evaluating security, it will be important to develop a plan for protecting some of the older and more valuable materials. One might consider keeping some of the classic USGS publications and other treasures in shelves in the library office. Many libraries keep older volumes in locked "storage" areas or even in shelves in the regular library with "cages" around them that have to be unlocked and opened for access. It will certainly help the library's security to keep a geologist working in the library office. As soon as some circulation procedures are established and the inventory is current, everyone should feel much more confident about the safety of the special materials.

7. Create a "Digital Library"

There are all kinds of important materials housed at VDMR, and it would be a great service to the Commonwealth if they were digitized and made available online. Maps, slides, mineral and fossil descriptions and other documents could be scanned and

organized so that they could be accessible to educators and citizens across Virginia. Once they are scanned, the original documents may be sent to Richmond to be stored permanently at the Library of Virginia. This would be a great project for VDMR, and could probably be accomplished with the help of a few dedicated summer interns and some grant money from the state. All of the old topographical maps could be scanned and made available for purchase as a CD-ROM along with the other Virginia geological publications.

8. Establish Partnership with UVA

Many of the state survey libraries work as partners with their neighboring state universities, and it might be good for VDMR to look into establishing a closer relationship with UVA's library system. Sometimes state geology libraries that are near universities can collaborate on projects and share resources. UVA has several branch libraries serving different departments, and they might be willing to work with VDMR if they thought it would be advantageous to have access to VDMR's collection. UVA's library administrators might be open to the idea of sharing their catalog system, and the VDMR library could benefit from the expertise of their cataloguers. Certainly UVA is an excellent source of student employees or interns.

9. Reorganize Books According to LCC

The previous librarian at VDRM apparently classified books according to the Library of Congress Classification System, and the rest of the books should be organized according to these call numbers as well. The numbered-shelves system seems to be

adequate now because most people know where to find what they want, but the library would be a lot more accessible if the books and publications were in LCC order. LCC (like the Dewey Decimal System) is organized according to subjects, which makes browsing much easier. It would take some effort to reorganize the books, but I am certain that that would be one of the first concerns of a librarian if one were to be hired. Labels should be made with LCC numbers for each book and put on the spines (see the notes about acquisition procedures). Then materials should be rearranged in the proper order with new signs for the shelves. The unpublished materials that do not have call numbers could be kept in their existing collections, and the government documents could be kept "SuDoc" order (http://www.gpo.gov/su_docs/fdlp/pubs/explain.html).

10. Hire Professional Librarian

Finally, since VDMR did ask a librarian for advice, my last recommendation is to hire someone with an MLS degree. The VDMR library can be (and has been) maintained without a librarian, but there are many things that could be improved with the help of a full time professional employee. People with a Master's of Library Science degree have been trained to deal with many different kinds of issues, and they know how to use available resources and professional networks to find solutions. A good librarian can help a whole organization to thrive by providing patrons with the resources that they need and by encouraging creativity and continual learning. Librarians have many skills that can bring vitality to a library like VDMR's, especially now that so much information is available on the web. Obviously VDMR would have a librarian if they could afford it (the minimum for a professional librarian is usually $40,000), so for now VDMR will have to

do the best they can with the present staff. The employees who do care about the library should be encouraged in their efforts and given the time they need for library-related work throughout the year. It might be useful to contact library and information science schools around the area to advertise a "field experience opportunity" for an MLS student who could devote a summer to the library. UNC-Chapel Hill, Catholic University, and the University of Maryland are the closest to Charlottesville and there is always a chance that there are students at those universities who would be eager to accept an opportunity to live in Albemarle County for a few months. If there ever is enough money, however, a full-time librarian will be a wise investment for VDMR.

CONCLUSION

The VDMR library has taken a brave step in facing their shortcomings and asking for help. Even though they have not been able to provide the resources necessary for large-scale improvements in the past decade and probably won't for several more years to come, the people in charge of this library sincerely care about the future of the library. They understand that a number of improvements could be made to their library services, especially in the way it has been run from day to day. With a well maintained library and a functional, accurate catalog, VDMR could help their field geologists across the state to find the information resources they need, the genealogists of the community to know what materials are available to them, and the geologists who work in the department to know about all the great resources just down the hall that are there especially for them.

Appendix A. Photos in the VDMR Library

Photos by S. Z. Hodkinson, 9-15-2006.

Appendix B. Currently Used "Location of Library Materials Quick Index"

Location of Library Material-Quick Index			
Stack	Side	Items	Shelf
A	A	Division Mineral Resources Publications (Bull,Pubs, etc)	1-10
A	A	Map Transfer Index	6
A	A	Maps on Demand (MOD's), Virginia Minerals	10
A	A	DMR Open File Reports	15-17
A	B	Water Control Board Publications	29
A	B	VPI & SU Publications	36, 37
A	B	Department of Highways	38
A	B	USGS Water Resource Data Books	30-32
B	A	USGS Map Series	ALL
B	B	Horizontal and Vertical Control Books	22-25
B	B	GSA Transects and Maps	17,18
B	B	Gardner Collection	36
B	B	Bird Collection	37, 38
C	A	Frye Collection	1-11
C	A	Goodell Collection	16, 17
C	B	DMR Collection	ALL
D	A	DMR Collection	ALL
D	B	DMR Collection	ALL
E	A	DMR Collection	ALL
E	B	DMR Collection	ALL
F	A	Forestry Collection	ALL
F	A	Forestry Collection	ALL
G	A	Forestry Collection, Acts of the Assembly	ALL
G	B	Forestry Collection, Acts of the Assembly	ALL
H	A	Oversized Books	
H	B	DMM Collection	
J	A	Theses and Dissertations	2-11
J	A	Fieldtrip Guidebooks	22-30
J	B	Industrial Mineral Forums and Conference Reports	36
J	B	International Geological Congress	37-39
J	B	USGS/Bureau of Mines Mineral Year Books	59-69
K	A	USGS/Bureau of Mines Mineral Year Books	1-4
K	A	USGS/Bureau of Mines Bulletins	5-11
K	A	USGS/Bureau of Mines Information Circulars	15-30
K	A	USGS/Bureau of Mines Reports of Investigations	32-34
K	B	USGS/Bureau of Mines Reports of Investigations	36-55
L	A	Other State Geological Survey Publications	ALL
L	B	Other State Geological Survey Publications	ALL
M	A	Other State Geological Survey Publications	ALL
M	B	Seismic/Earthquake Information	34-36
M	B	Water Resources -Virginia	41-42
N	A	Smithsonian Contributions to Paleobiology	29-30
N	A	U.S. Department of Energy	31-32
N	A	National Park Service	33
N	A	USGS Geodetic Special Publications	34
N	B	Geothermal Energy Documents	38
N	B	Various U.S. Government Documents	43-56
P	B	U.S. Geological Survey Bulletins	ALL
Q	A	U.S. Geological Survey Bulletins	ALL
Q	B	U.S. Geological Survey Bulletins	23-26

Q	B	U.S. Geological Survey Circulars	30-38
R	A	U.S. Geological Survey Professional Papers	ALL
R	B	U.S. Geological Survey Professional Papers	ALL
S	A	U.S. Geological Survey Annual Reports	8-12, 19
S	A	USGS Monographs	12-18
S	B	U.S. Geological Survey Water Supply Papers	ALL
S	B	Water Resources Investigation Reports	38-39
T	A	U.S. Geological Survey Open File Reports	1-4
T	A	USGS Open File Reports Geomagnetic Data	15
T	B	AAPG Bulletin	22-31
T	B	AAPG Memoirs	32-33
T	B	AGU Transactions	36-39
T	B	AIME	40-42
U	A	American Journal of Science	1-6
U	A	American Mineralogists	8-13
U	A	Annotated Bibliography of Economic Geology	15
U	A	Bulletin of American Paleontology	16-18
U	A	Carnegie Institute	19
U	B	Economic Geology	22-27
U	B	Engineering and Mining Journal	29-32
U	B	GSA Abstracts	35-39
V	A	GSA Bulletin	1-10
V	A	GSA Memoirs	15-20
V	B	GSA Geology of North America (DNAG)	22-24
V	B	GSA Special Papers	25-28
V	B	GSA Geology	31-32
V	B	Geophysical Abstracts	33-34
V	B	Geophysical Research Letters	36-37
V	B	Geophysics	38-40
W	A	Geophysics	2-4
W	A	Geoscience Abstracts	5-9
W	A	Geotimes	
W	A	Groundwater	10
W	A	Interstate Oil and Gas Compact Bulletins	11
W	A	Journal of Geology	15-20
W	B	Journal of Geophysical Research	22-30
W	B	Journal of Metamorphic Geology	31
W	B	Journal of Petrology	32
W	B	Journal of Research USGS	33
W	B	Journal of Paleontology	36-40
X	A	Journal of Sedimentary Research	1-3
X	A	Journal of Structural Geology	5-6
X	A	Mineralogical Abstracts	8-9
X	A	Mineral Magazine	10
X	A	Mineralogical Record	11
X	A	The Mining Congress Journal	13
X	A	Mining Engineering	15-16
X	A	Northeastern Geology	17
X	A	Reviews of Geophysics and Space Physics	18-19
X	A	Rocks and Minerals	20
X	B	Rocks and Minerals	22-23
X	B	Seismological Society of American Bulletin	24-26

X	B	Earthquake Notes	27
X	B	Southeastern Geology	29-30
X	B	State Geologists Journal	32
X	B	Tectonics	36-37
X	B	Virginia Journal of Science	38-39
X	B	Washington Academy of Science	40
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Appendix C. Summary of Notes from VDMR Archival Committee Meeting

Summary of DMR in-house data needing archival attention

The vision for internal archival research material is that a DMR geologist, from his desktop computer, should be able to determine what data is available for his area of interest and then view the data, whether it is chemical analyses or photographs of fossils, core, or thin sections. If he determines he needs more detail, he can then examine the actual sample. Access to this archival data by geologists external to DMR will have to be determined. It may be possible to give access to some but not all data or to give special clearance to individuals.

DMR has 21 data sets that need archival work. This does not include data such as the MRV (Mineral Resources of Virginia) or the Coal Mine Map datasets, which are active projects. With the exceptions of two projects that would be best out-sourced (converting seismic data tape to modern media, and scanning and digitizing geophysical well log data), the majority of the archival work involves 1) scanning paper documents and maps, 2) digital photography of core, fossils, and thin sections; and 3) entering basic descriptive information about the documents, samples, and maps into a searchable database(s). Man-hours must be allocated to the design and creation of databases not already made and to the development of a data viewing application.

For most archival tasks, the costs would primarily be associated with man-hours and digital information storage. Depending on what is done, other costs could be:

1. Outsourcing the conversion of seismic data from obsolete tape formats to modern media
2. Outsourcing the scanning and digitizing geophysical well log data
3. A rig for efficiently digitally photographing core might need to be purchased or made.
4. Attachments for the petrographic microscope to enable digital photographs of thin sections
5. Purchase of additional core and well cutting storage space.
6. Purchase of saw for cutting core
7. Purchase of document management software.

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